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FIG. 1a

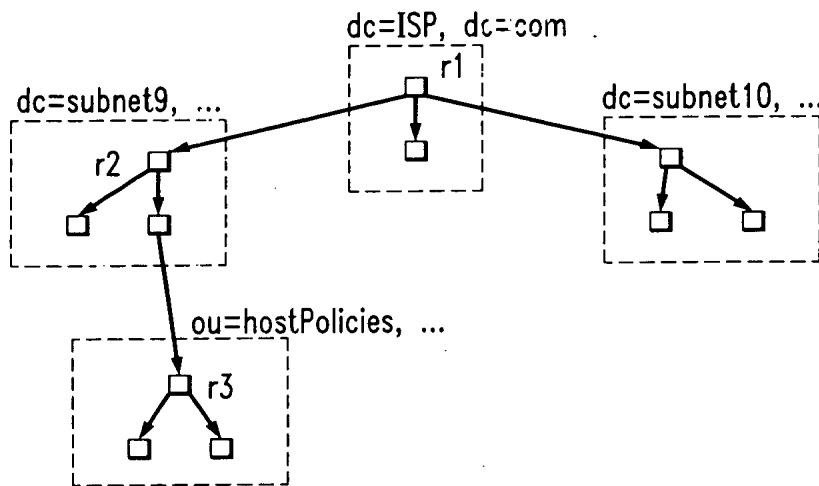
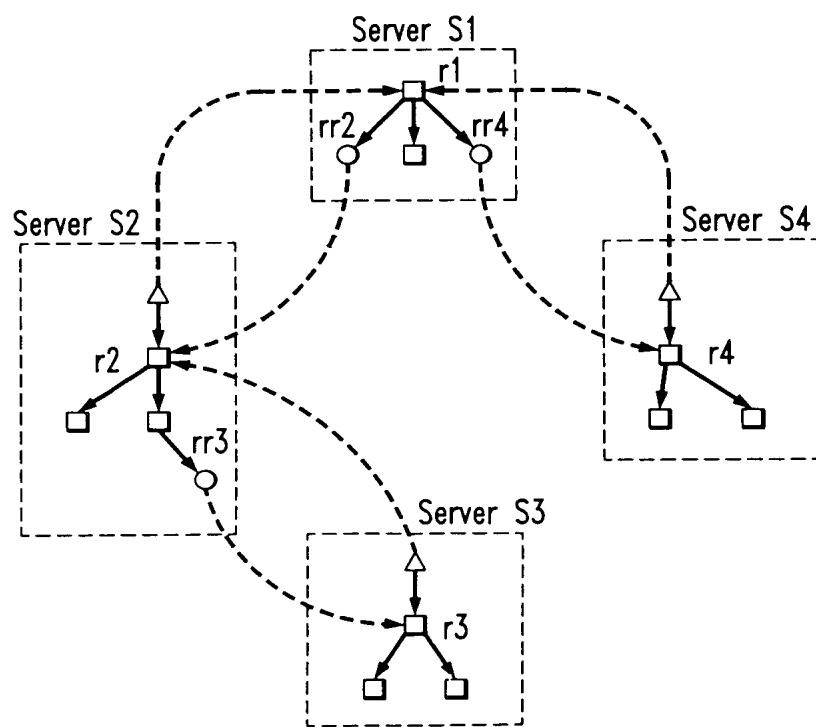


FIG. 1b



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FIG. 2a

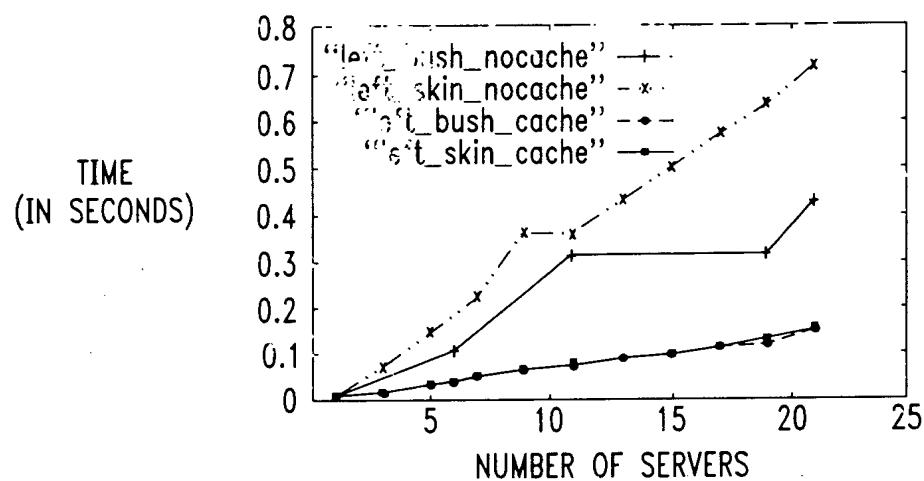
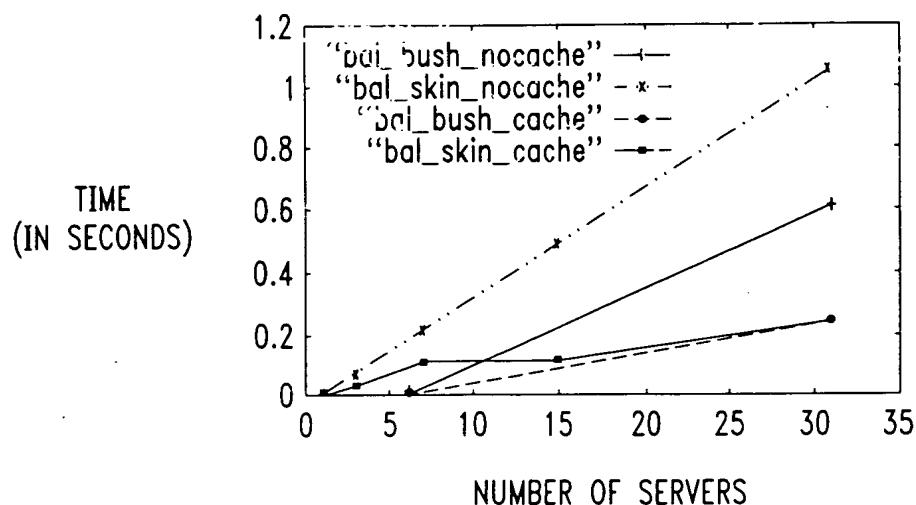
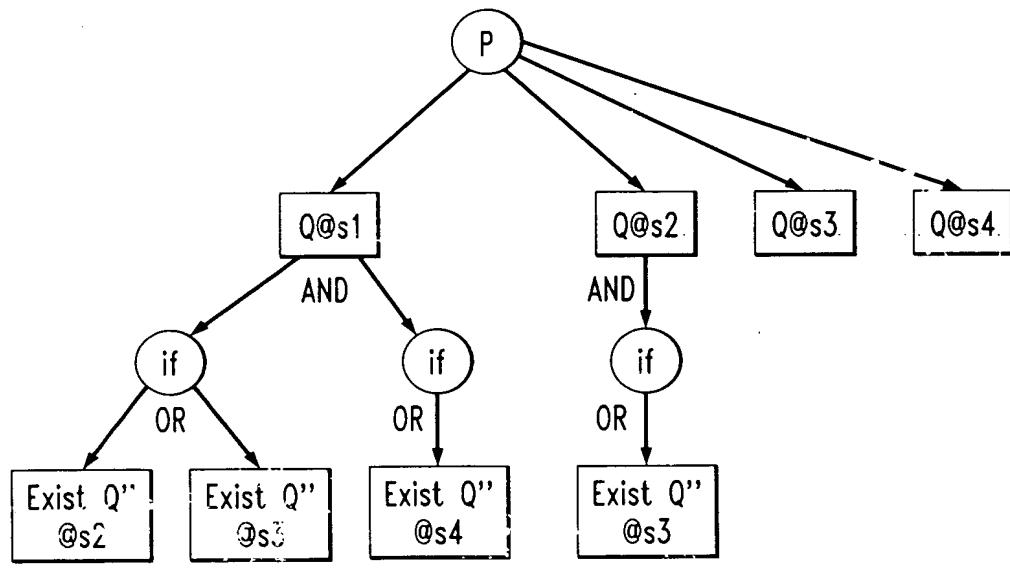


FIG. 2b



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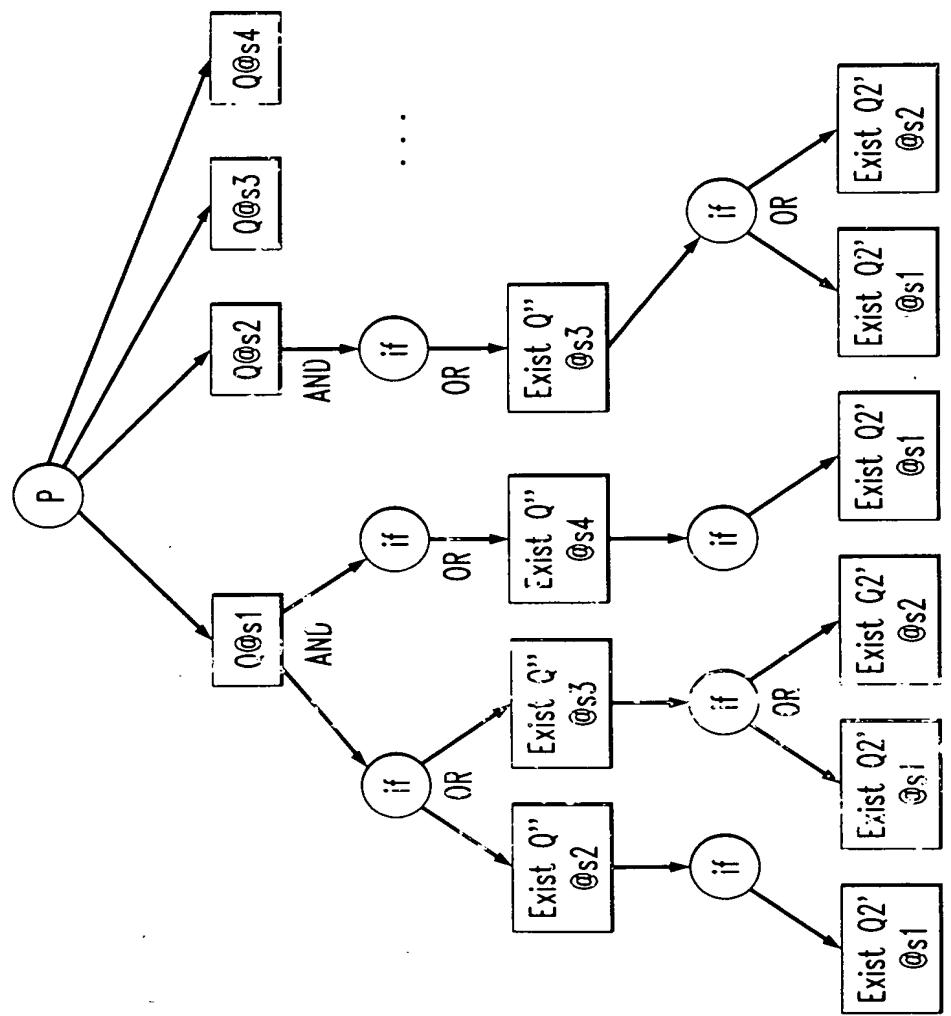
FIG. 3



$$Q = (d \ Q' \ Q'')$$

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FIG. 4



$$Q = (d \ Q' \ (\alpha \ Q1' \ Q2'))$$

FIG. 5

```

Algorithm Schedule(PT) {
    Answer := { }; Pending := { }; Enabled := { };
    for each n in leaves(PT) do computeQueryNode(n);
    while (Enabled ≠ { } OR Pending ≠ { })
        L := chooseForSchedule(Enabled); /* implements a particular scheduling policy */
        for each (Q,S) in L do
            Pending := Pending ∪ {(Q,S)}; LDAP_issueQuery(Q,S);
            LDAP_waitForEvent(e);
            case e.type of
                boolean answer for Q@S: Pending := Pending -{(Q,S)}
                storeCache(Q,S,e.value);
                for n in getCacheWaitinglist(Q,S) do {
                    n.value := e.value;
                    computeConditionalNode(n.parent);
                }
                directory entry for Q@S: Answer := Answer ∪ {e.value}
                End-of-Entries for Q@S: Pending := Pending -{(Q,S)}
            return Answer;

    function computeQueryNode(n) {
        if all n's children are computed then
            Q := generateQueryExpression(n.Query); /* expands all if-macros*/
            S := n.Server; v := getCache(Q,S);
            case v of
                INEXISTENT:      insertCache(Q,S, Pending);
                                  Enabled := Enabled ∪ {(Q,S)};
                                  addCacheWaitingList(Q,S,n);
                Pending          addCacheWaitingList(Q,S,n);
                TRUE, FALSE:     n.value := v;
                                  computeConditionalNode(n.parent)
    }
    function computeConditionalNode(n) {
        if (exist p in n.children such that p.value = TRUE) then
            n.value := TRUE; computeQueryNode(. . .);
        else if (all n's children are computed) then
            n.value := FALSE; computeQueryNode(n.parent);
    }
}

```

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FIG. 6

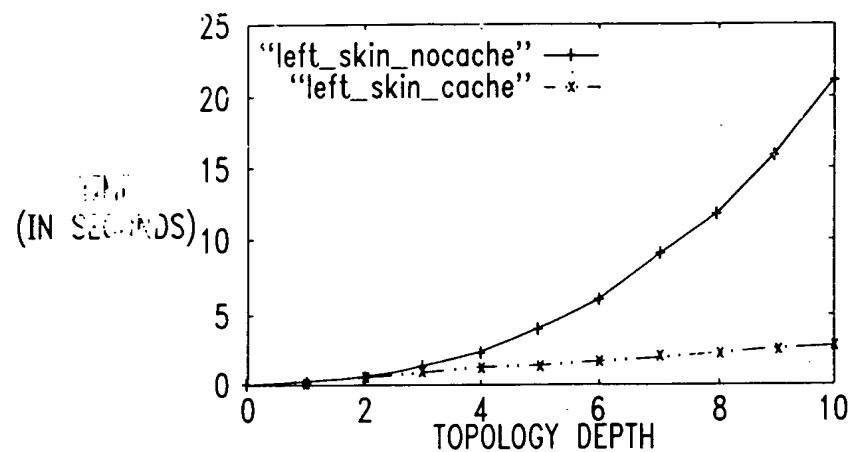


FIG. 7a

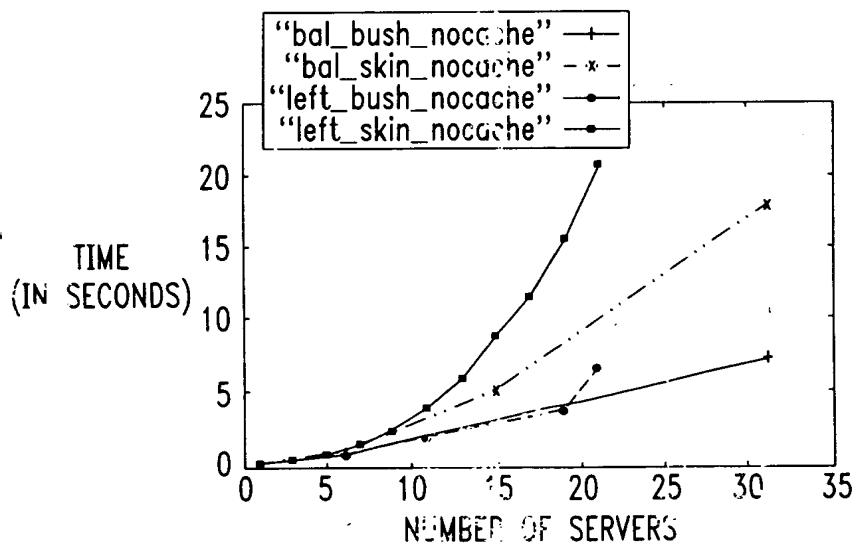


FIG. 7b

